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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,082	11/26/2003	Yiming Yu	A1298CON1	7878

27055 7590 07/28/2004

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EXAMINER

TRAN, DALENA

ART UNIT PAPER NUMBER

3661

DATE MAILED: 07/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/723,082

Applicant(s)

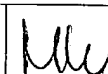
YU, YIMING

Examiner

Dalena Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 8, 11-13, 17 and 18 is/are rejected.
- 7) ☒ Claim(s) 4-6, 9, 10, 14-16, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/26/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### Notice to Applicant(s)

1. This application has been examined. Claims 1-20 are pending.
2. The prior art submitted on 11/26/03 has been considered.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2,7-8,11-12, and 17-18, are rejected under 35 U.S.C.103(a) as being unpatentable over Welles, II et al. (5,864,315) in view of Zampetti (5,666,330).

As per claim 1, Welles, II et al. disclose a method for providing a frequency standard signal, comprising: acquiring a GPS signal using an acquisition time period of at least two GPS data bit times for determining correlation sum for code phases, respectively (see column 4, lines 3-55), and carrier-less tracking GPS signal, after GPS signal has been acquired, for providing a clock bias error (see column 5, lines 8-31). Welles, II et al. does not disclose disciplining frequency standard signal. However, Zampetti discloses disciplining frequency standard signal with clock bias error for tracking GPS carrier frequency (see the abstract; and column 4, lines 25-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Welles, II et al. by combining disciplining frequency standard signal with clock bias error for removing the phase error.

As per claim 2, Welles, II et al. disclose carrier-less tracking includes estimating Doppler shifts of GPS signal from GPS orbital data; and using estimated Doppler shifts for tracking GPS signal frequency without frequency feedback correction from GPS signal (see column 4, line 56 to column 5, line 7; and column 5, line 32 to column 6, line 9).

As per claim 7, Welles, II et al. does not disclose monitoring clock bias error. However, Zampetti discloses disciplining frequency standard signal includes monitoring clock bias error for predicting a frequency drift for frequency standard signal while GPS signal is being tracked (see column 4, line 49 to column 5, line 2; and column 9, line 40 to column 10, line 4), and using predicted frequency drift for adjusting clock bias error for compensating for frequency drift when GPS signal is not being tracked (see column 5, lines 3-35; and column 10, line 55 to column 11, line 4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Welles, II et al. by combining monitoring clock bias error to provide time base references with the highest degree of precision, accuracy and stability.

As per claim 8, Welles, II et al. disclose determining at least one of aging and temperature dependence for frequency standard signal (see the abstract; and column 8, lines 5-25).

Claims 11-12, are clock system corresponding to method claims 11-12 above. Therefore, they are rejected for the same rationales set forth as above.

Claims 17-18, are clock system corresponding to method claims 7-8 above. Therefore, they are rejected for the same rationales set forth as above.

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5. Claims 3, and 13, are rejected under 35 U.S.C.103(a) as being unpatentable over Welles, II et al. (5,864,315), and Zampetti (5,666,330) as applied to claim 1 above, and further in view of King et al. (6,532,251).

As per claim 3, Welles, II et al., and Zampetti do not disclose plurality of coherent integration periods. However, King et al. disclose acquisition time period includes a plurality of coherent integration periods (see column 22, lines 31-51), and acquiring includes determining a plurality of correlation levels for plurality of coherent integration periods, respectively, for code phases, and then incoherently combining correlation levels at corresponding ones of code phases for providing correlation sums (see column 15, line 45 to column 16, line 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Welles, II et al., and Zampetti by combining plurality of coherent integration periods for tracking frequency standard signal.

Claim 13, is clock system corresponding to method claim 3 above. Therefore, it is rejected for the same rationales set forth as above.

6. Claims 4-6,9-10,14-16, and 19-20, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

. Tiemann et al. (6,028,883)

. Froelich et al. (6,178,197)

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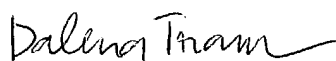
. King et al. (6,661,371)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 703-305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner  
Dalena Tran



July 23, 2004